

A high-level monthly briefing on operations and activities at the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory – Home of Science and Engineering Solutions. Work at the lab advances the Department's strategic goals in the areas of energy, environment, defense and science.

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## ■ ENERGY – Diesel Fuel Converted to Clean Hydrogen

Researchers working at Idaho's national laboratory have successfully converted sulfur-rich diesel fuel into clean hydrogen gas. Their novel diesel-reforming technology has environmental, military and humanitarian implications. The environmental significance is twofold. First, diesel-reforming technology may help reduce air pollution. Converting high-sulfur diesel into a clean energy source avoids air emission concerns associated with burning it in conventional combustion systems. Second, the reformer can help squeeze more power from fuel. The energy conversion rate is much higher with an integrated reformer/fuel cell system than with standard gas turbines. Power systems can effectively get twice as much energy from the same amount of low-grade diesel fuel. The reformer work was supported and jointly conducted with the Office of Naval Research and SOFCo-EFS.

## ■ ENVIRONMENT – Cleanup Progress Hailed

The Idaho Completion Project recorded its safest cleanup year on record as well as its most productive in fiscal 2004. "More on-the-ground cleanup work was accomplished this year than any year in INEEL history," said Beth Sellers, manager of DOE's Idaho Operations Office. "The innovative concepts utilized this year enabled the cleanup to be done in a safer manner and at less cost." Notable examples of success include completion of physical remediation at the Central Facilities Area and the Power Burst Facility, characterization and off-site shipment of 2,373 cubic meters of mixed low-level waste – eliminating the backlog from the INEEL, and removal of 104 unneeded buildings and structures across the INEEL.

## ■ DEFENSE – Former Bush Administration Security Official Visits Lab

Ambassador Robert Joseph was in Idaho Nov. 23 as featured lecturer for the lab's National Security Seminar Series. Joseph served for four years as the Special Assistant to the President and Senior Director for Proliferation Strategy, Counterproliferation and Homeland Defense in the National Security Council. He was specifically responsible, under the supervision of the National Security Advisor Condoleezza Rice, for developing and coordinating U.S. policies and strategies for preventing, deterring and defending against all threats to the United States from weapons of mass destruction. The INEEL's National Security Seminar Series brings top speakers to Idaho to address issues of global importance. This seminar was open to the public.

## ■ SCIENCE – New "Fellows" Named

Following recommendations and guidelines provided by the National Academy of Sciences, the INEEL has selected five pre-eminent researchers to be the first Laboratory Fellows in a newly revitalized program. William Apel, James Delmore, Paul Meakin, David Petti and Herschel Smartt have been singled out for their professional knowledge, scientific and engineering achievements, and national and international technical leadership. "It gives us great pleasure to recognize these five for their extraordinary contributions to science and engineering and to the INEEL," Laboratory Director Paul Kearns said. "Each of them has enjoyed a distinguished career that has also contributed significantly to the INEEL's mission, programs and future."

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